REMARKS

This application has been reviewed in light of the Office Action mailed on August 17, 2002. Claims 1-24 are pending in the application with Claims 1, 2, 3, 21, 22, 23 and 24 being in independent form. By the present amendment, Claims 1, 2, 3, 21, 22, 23 and 24 have been amended and Claims 25-27 has been added. No new matter or issues are believed to be introduced by the amendments.

Applicant's acknowledge the Examiner's request for cooperation in correcting any errors of which Applicant may become aware in the specification. Upon reading through the specification, Applicant has not discovered any errors requiring correction.

Claims 1-24 were rejected under 35 U.S.C. § 103(a) over Heinzelman (U.S. Patent 6,754,277) in view of Sugiyama (U.S. Patent No. 6,192,077).

Independent Claims 1, 2, 3, 21, 22, 23 and 24 have been significantly amended herein to better define Applicants' invention and to patentably distinguish Applicants' invention over Heinzelman in view of Sugiyama. Claim 1, as amended, recites:

> A method for data transmission, comprising the acts of:
> receiving a multimedia stream through an electronic medium, the stream comprising a plurality of <u>motion</u> vectors;
> <u>extracting one or more motion vectors from the multimedia stream;</u>
> analyzing the one or more extracted <u>motion</u> vectors;
> <u>partitioning the multimedia stream into a plurality of data types based at least in part on the analysis of the extracted motion vectors; and</u>
> <u>adding a plurality of error protection units to the multimedia stream based on the analysis of the extracted motion vectors.</u>

The invention employs a novel method for protecting the transmission of multimedia data. The method is based on motion vector extraction and analysis. Specifically, the method includes partitioning a data stream and adding error protection

units to the partitioned data stream based on the results of a previously performed motion

vector extraction and analysis, as recited in Claim 1 above. One example of this novel

technique is disclosed in the specification at par. [16] wherein it is stated: *For example,*

the analysis software tool 120 could detect the moving of objects in a particular

section(s) (e.g., the top) of a frame. Future frames could then be partitioned so that the

same particular section(s) in the future frames receive more error protection than other

section(s) (e.g., the bottom of the frame). Par. [15] recites that motion vectors are

analyzed in an analysis software tool.

Heinzelman is directed to a technique for further protecting the transmission of

multimedia data over a wireless network. In addition to utilizing conventional MPEG4

video compression, Heinzelman teaches the use of unequal error protection channel

coding with data partitioning using higher error protection for packet header information

and motion data than for texture data. Heinzelman discloses at Col. 3, lines 6-8 that

Channel coding has long been used to protect data that may get corrupted through

transmission or storage. In the preferred embodiments, the coding rate is changed for

unequal error protection in which important sections of a bitstream are protected better

than the less important sections. Video packets are broken into approximate parts of

header, motion and texture data. The breakdown into the various approximate parts is

performed by knowing that a video packet constructed in accordance with the MPEG-4

standard has a particular form. Namely, the video packet header is less than 60 bits long

and the motion part of the packet is typically less than 155 bits long (see Heinzelman at

Col. 4, lines 3-37 and Fig. 3). Different rates can be used to code the four sections

(stuffing being the fourth section). Section 1 can be coded using a rate-r1 coder, section 2

can be coded using a rate-r2 coder, and so on (see Heinzelman at Col. 4, lines 38-42). The different coder rates are generated through convolutional encoding in which the number of generator polynomials are changed. To use a rate-k/n code, a rate-1/m code is punctured at the output using a given puncture period and puncture pattern (See Heinzelman at Col. 3, lines 38-56).

Applicant respectfully submits that Claim 1, as amended hereinabove, is patentably distinct over the disclosure of Heinzelman. In contrast to the claimed invention, Heinzelman does not teach or disclose extracting one or more motion vectors from the multimedia stream; analyzing the one or more extracted motion vectors; partitioning the multimedia stream into a plurality of data types based at least in part on the analysis of the extracted motion vectors; and adding a plurality of error protection units to the multimedia stream based on the analysis of the extracted motion vectors. Heinzelman instead teaches breaking down video packets into approximate parts of header, motion and texture data and using different coding rates to code the respective sections. Further, the break down of the video packets is not based on an extraction of motion vectors but is instead based on knowing how a video packet is constructed in accordance with the MPEG-4 standard.

The subject matter of new Claims 25 – 27 further distinguish the invention over Heinzelman in that they recited that the plurality of data types in which the multimedia stream is partitioned into comprise texture data, scene data and motion data. The partitioning into the respective data types being based on an extraction of motion vectors.

Accordingly, withdrawal of the rejection under 35 U.S.C. §103(a) with respect to Claim 1 and allowance thereof is respectfully requested.

The secondary reference, Sugiyama, is cited by the Examiner to cure a deficiency in Heinzelman. Specifically, Sugiyama is cited for disclosing that in mpeg coding environments, it is known to represent motion information in the form of a plurality of vectors. Assuming, Sugiyama discloses that in mpeg coding environments, it is known to represent motion information in the form of a plurality of vectors, such combination still does not teach or suggest the elements of Claim 1.

It is therefore respectfully submitted that at least the limitations and/or features of Claim 1 which are newly added and underlined above are not disclosed or suggested by the cited references, alone and in combination.

Hence, withdrawal of the rejections under 35 U.S.C. §103(a) and allowance of independent Claim 1 is respectfully requested. Claims 4-8, 9 and 18 depend from Claim 1 and therefore include the limitations of Claim 1. Accordingly, for the same reasons given for Claim 1, Claims 4-8, 9 and 18 are believed to contain patentable subject matter. Hence, withdrawal of the rejections under 35 U.S.C. §103(a) and allowance of Claim 4-8, 9 and 18 are respectfully requested.

Independent Claims 2, 3, 21, 22, 23 and 24 recite similar limitations as the limitations recited by independent Claim 1, and therefore the same arguments presented above for independent Claim 1 apply to independent Claims 2, 3, 21, 22, 23 and 24.
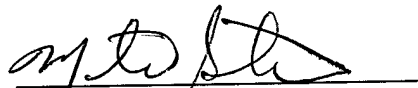
Hence, withdrawal of the rejections under 35 U.S.C. §103(a) and allowance of independent Claim 2, 3, 21, 22, 23 and 24 is respectfully requested.

Claims {10-13 and 19} and {14-17 and 20}depend from Claims 2 and 3, respectively, and therefore include the limitations of Claims 2 and 3. Accordingly, for the same reasons given for Claim 2 and 3, , Claims {10-13 and 19} and {14-17 and 20}are

believed to contain patentable subject matter. Hence, withdrawal of the rejections under 35 U.S.C. §103(a) and allowance of Claim Claims {10-13 and 19} and {14-17 and 20}are respectfully requested. It is further submitted that each of the independent claims recite patentable subject matter in their own right.

If the Examiner should have any questions concerning this communication or feels that an interview would be helpful, the Examiner is requested to call Dicron Halajiain, Esq., Intellectual Property Counsel, Philips Electronics North America Corp., at 914-333-9607.

Respectfully submitted,

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